

**DEPARTMENT OF TRANSPORTATION****DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-011321**Date Inspected:** 10-Dec-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 1900**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 700**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** See Below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG and Tower**Summary of Items Observed:**

CWI Inspectors: Mr. You Qi Guo, Mr. Sha Zhi

On this date CALTRANS OSM Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. This QA Inspector observed the following:

**Tower Bay 10**

This QA Inspector observed ZPMC welder Ms. Dong Yuqin, stencil 053116 is using flux cored welding procedure WPS-B-T-2132 to make north tower lift 4 corner assembly weld NSTL4-3H/L-073. This QA Inspector measured a welding current of approximately 305 amps and 30.5 volts and the base material has been preheated with a torch and ZPMC QC CWI Mr. Gao Zhi Chun is monitoring this welding. This QA Inspector observed that Ms. Dong Yuqin appears to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Ms. Dong Yumei stencil 054069 is using flux cored welding procedure WPS-B-T-2132 to make north tower lift 4 corner assembly weld NSTL4-3I/L-004. This QA Inspector measured a welding current of approximately 320 amps and 30.8 volts and the base material has been preheated with a torch and ZPMC QC CWI Mr. Gao Zhi Chun is monitoring this welding. This QA Inspector observed that Ms. Dong Yumei appears to be certified to make this weld. Items observed on this date appeared to generally comply with

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applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Yu Jun, stencil 201825 is using flux cored welding procedure WPS-B-T-2132 to make north tower lift 4 corner assembly weld NSTL4-3G/L-122. This QA Inspector measured a welding current of approximately 320 amps and 30.58 volts and the base material has been preheated with a torch and ZPMC QC CWI Mr. Gao Zhi Chun is monitoring this welding. This QA Inspector observed that Ms. Dong Yumei appears to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Wang Gungzhi, stencil 050041 is using flux cored welding procedure WPS-B-T-2132 to make north tower lift 4 corner assembly weld NSTL4-3I/L-122. This QA Inspector measured a welding current of approximately 320 amps and 31.0 volts and the base material has been preheated with a torch and ZPMC QC CWI Mr. Gao Zhi Chun is monitoring this welding. This QA Inspector observed that Mr. Wang Gungzhi appears to be certified to make this weld. Items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Huang Zhao, stencil 056200 is using shielded metal arc process procedure WPS-485-SMAW-2G(2F)-Repair to make South tower lift 4 weld repair SSTL4-1L/C-5B. This QA Inspector observed a welding current of approximately 275 amps and that the welding electrodes are being stored in a heated electrode storage container that is connected to an electric power supply. This QA Inspector observed QC personnel monitoring the base material interpass temperature and the welder is waiting until the temperature appears to be below 230 degrees Celsius prior to depositing additional weld passes. Note: Prior to welding this QA Inspector observed ZPMC has not documented that a magnetic particle inspection has been performed of this gouged area. This QA Inspector asked ZPMC QC Inspector Mr. Gao Zhi Chun if ZPMC has performed a magnetic particle inspection of the gouged area and Mr. Gao Zhi Chun said this is not a critical weld repair and ZPMC is not required to perform a magnetic particle inspection of this area. This QA Inspector observed ZPMC has ground the gouged area to a bright metal condition and this QA Inspector performed random magnetic particle inspection inspections of this gouged area and items observed on this date appeared to generally comply with applicable contract documents.

This QA Inspector observed ZPMC welder Mr. Bi Chun stencil 040343 is using flux cored welding procedure WPS-485-FCAW-2G(2F)-Repair to make north tower lift 4 weld SSTL4-1B/L-3B between skin A and skin E. This QA Inspector verified Mr. Bi Chun appears to be is certified to make this weld. This QA Inspector observed a welding current of approximately 315 amps and 31.2 volts. Items observed by this QA Inspector appear to be progressing in compliance with project specifications.

This QA Inspector observed ZPMC welder Mr. Yu Chaoye, stencil 053869 is using flux cored welding procedure WPS-345-FCAW-1G(1F)-Repair to make repairs to south tower lift 4 weld SSTL4-1B/L-3B between skin A and skin E. This QA Inspector observed a welding current of approximately 315 amps, 31.4 volts and base material appears to have been preheated using an electric heating element. This QA Inspector observed that Mr. Yu Chaoye is certified to make this weld. Items observed by this QA Inspector appear to be progressing in compliance with project specifications.

Heavy Dock

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Starting at around 0045 hours on December 11, 2009 this QA Inspector and Caltrans QA Inspector Mr. Shrikant Utekar observed ZPMC personnel using a floating crane to move North Tower Lift 1 from the horizontal to the vertical position. This QA Inspector used a digital video camera to record this event. The move appeared to progress smoothly and no problems occurred during this operation. ZPMC positioned this up righted tower adjacent to the other three standing towers and when the tower was lowered to approximately 150 mm clearance from the baseplate, ZPMC stopped additional lowering of the tower. It appears there may be interference between some of the shear links that are protruding from various towers which prevents additional lowering of North Tower Lift 1. As of around 0200 hours all work stopped, the North Tower Lift 1 was being supported by the floating crane and most of the ZPMC workers left the heavy dock.

### Summary of Conversations:

See Above.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Eric Tsang phone: 150-0042-2372 , who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Dawson,Paul	Quality Assurance Inspector
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<b>Reviewed By:</b>	Carreon,Albert	QA Reviewer
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